بسم الله الرحمن الرحيم

عنوان المحاضرة: Amenorrhea

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Definition: Absence or abnormal cessation of menstruation

Classification: a) Onset: -Primary -Secondary B) Cause: -Physiological -Pathological

-**Primary:** Menstruation never occurred before Incidence: 0.1%

(14 yrs without secondary sexual characters or 16 yrs with 2ary Sexual characters)

-**Secondary:** Menstruation cessation, after occurring, for 6 months or 3 consecutive cycles

-**Physiological:**

*Before Puberty: d.t. CNS suppress.→ Low Gonadotrophic hormones→ Low estrogen & progesterone

*Pregnancy→ high estrogen & progesterone → suppression of gonadotrophic hormones

*Lactating women→ d.t. high level of prolactin *Postmenopausal→ d.t. exhaustion of follicles

-**Pathological:**

a) False: (Cryptomenorrhea) hidden menstruation d.t. outflow tract obstruction

Causes: I) Congenital: -Imperforate hymen -Transverse vaginal septum -Vaginal aplasia (agenesis)

-Non-communicating horns -DES exposure (cause cervical atresia)

II) Acquired: (mostly iatrogenic) -Cervical polyp / fibroid

-Complication of (cauterization/Conization/Amputation) of cervical ulcer in Cervical Intraepithelial Neoplasia (CIN) -Stitching of anterior wall to posterior wall of lower uterine segment in cesarean section

Symptoms: 1-Primary amenorrhea (2ary if acquired) 2-Pelvi-abominal mass (خطر لأن الأهل بيفكروها حامل)

3-Cyclic lower abdominal pain (misdiagnosed as appendicitis 4-Acute Urine retention

Signs: a) General: -Presence of 2ary sexual characters –Associated Anomalies (e.g. spine defects)

b) Abdominal: -Pelvi-abdominal mass (central, dull, cystic)

c) Pelvic: -Bulging bluish distended membrane (imperforate hymen) –Transverse Vaginal septum

-Blind vaginal pouch (vaginal aplasia) -Probe stops at level of cervix (cervical stenosis)

d) Per-rectal: bimanual examination to determine if there is a uterus or not

Investigations:

1-Ultrasound: (hemtocorpus) 2-IVP (Intravenous Pyelography): (for associated UT anomalies)

3-Laparoscopy: (for non-communicating horn)

Treatment: Surgical correction of obstruction under general anesthesia with complete aseptic conditions

*Imperforate hymen: Cruciate incision *Transverse septum: septum excision

*Vaginal agenesis: -Trial of communicating Uterus and vaginal dissection (McIndoe operation)

-If can't be done → Hysterectomy

b) True:

Causes: -Compartment I: Uterine -Compartment II: Ovarian -Compartment III: Pituitary

-Compartment IV: Hypothalamus -General Causes

Workup scheme for investigations of any case of amenorrhea:

Test	Positive	Negative
Pregnancy test	Pregnant	Continue..
Serum prolactin	High→Hyperprolactinemia	Low→Continue..
TSH	High→ hyper /Low→ hypothyroid.	Normal→ Continue..
Progesterone challenge test	Menstruation →Anovulation	No Mens.→ Continue..
Estrogen & Progest. Challenge test	No menstruation→ Uterine defect	Mens.→ Continue..
Serum FSH & LH	High→ Ovarian cause	Normal→Continue..
LH-RH Test	Menstruation→ Hypothalamic	No→ Pituitary

**Wait for the effect of progesterone 10-14 days

HR

Special Disorders in Compartment I:

1-Mullerian Duct Agenesis: (Mayer-Rokitansky-Küster-Hauser syndrome)

Incidence: 1/4000, the second most common cause of primary amenorrhea

Pathophysiology & pathogenesis: Lack of development of Mullerian duct

Primary gonads: Ovaries **Secondary sexual characters:** present **Absent** Uterus/tubes/cervix

Symptoms & Presentation:

1-Primary amenorrhea 2-Primary infertility 3-Dyspareunia / Apareunia

4-Urethral incontinence (if intercourse occurs through it)

Signs & Examination:

a) General: -Present 2ary sexual characters

b) Abdominal: Pelvi-abdominal mass (in incomplete type) - Associated Kidney anomalies

c) Pelvic: Blind vaginal pouch

Investigations:

1-Hormonal Assay: (Estrogen & Progesterone challenge test) → No Menstruation, normal FSH & LH

2-Laparoscopy & Ultrasound: Absent uterus 3- Karyotyping: 46,xx ♀

Treatment:

A) For Sexual intercourse: Depend on depth of vaginal pouch: 5 cm → Progressive dilatation
Very Small→ Vaginoplasty (William's Operation) - McIndoe operation

B) For Infertility: Third-party reproduction by a surrogate mother

2-Androgen Insensitivity Syndrome: (Testicular feminization syndrome)

-Male Pseudohermaphrodite (46,xy) **Primary gonads:** Testis

Pathogenesis: due to androgen receptor defect so Androgen is converted into estrogen → ♀ Phenotype

Presentation: 1-Primary amenorrhea 2-Primary infertility 3-Dyspareunia / Apareunia

Examination: a) General: -Very pretty female (double sources of estrogen)
-Breasts are only fat (no glands) -No axillary or pubic hair

b) Abdominal: may be undescended testis or inguinal hernia c) Pelvic: Blind vaginal pouch

D.D.	Axillary & Pubic hair	Associated anomalies	Undescended testis	Karyotyping	Hormones
M.D.A	Yes	Yes	No	46,XX	Normal
A.I.S.	No	No	May be	46,XY	↑Androgen (Estrogen)

Treatment: *MUST GO with Sex of Rearing جنس التنشئة

1-Gonadectomy (Prevent malignancies as germinal cell carcinoma) after skeletal maturity (to avoid premature closure of epiphysis) then 2-Hormonal replacement Therapy (Estrogen)

3-Asherman's Syndrome:

40% of cases of secondary amenorrhea /Secondary infertility

Pathogenesis:

Intrauterine Synechiae (adhesions) due to trauma and INFECTIONS after gyne/obs procedure
e.g. D&C (Dilatation and Curettage) – Cesarean section – Uteroplasty

Level: Cervical - Isthmical - Intrauterine **Histological:** Fibrinous – Cartilaginous – Osseous

Presentation: 1-Menstual disturbances (amenorrhea, hypomenorrhea) 2-Infertility

3-Obstetric complications: (recurrent pregnancy loss - preterm labour – placenta previa)

Diagnosis and Treatment: Hysteroscopy and Lysis of adhesions

Bad Prognosis: 30% only pregnancy can occur